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LATERAL SUPERJUNCTION SEMICONDUCTOR DEVICE

ABSTRACT OF THE DISCLOSURE

A lateral conduction superjunction semiconductor device has a plurality of spaced vertical trenches in a junction receiving layer of P⁺ silicon. An N⁻ diffusion lines the walls of the trench and the concentration and thickness of the N⁻ diffusion and P⁺ mesas are arranged to deplete fully in reverse blocking operation. A MOSgate structure is connected at one end of the trenches and a drain is connected at its other end. An N⁻ further layer or an insulation oxide layer may be interposed between a P⁻ substrate and the P⁺ junction receiving layer.

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